

In the Claims

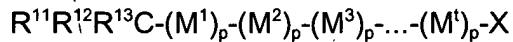
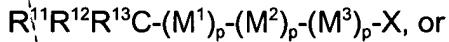
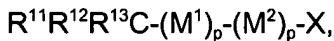
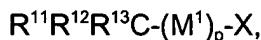
Please cancel claims 37, 40-42.

In claim 38, line 1, delete "37" and substitute therefor --64--;

In claim 39, line 1, delete "37" and substitute therefor --64--; and

Add new claims 64-67, as follows

--64. A (co)polymer, exhibiting a stereochemistry and microstructure, as defined by tacticity and sequence distribution, of a polymer formed by a free radical polymerization process and displaying a molecular weight distribution of less than 2.0 and calculable number average molecular weight, having the formula:



wherein X is selected from the group consisting of Cl, Br, I, OR<sup>10</sup>, SR<sup>14</sup>, SeR<sup>14</sup>, O-N(R<sup>14</sup>)<sub>2</sub>, S-C(=S)N(R<sup>14</sup>)<sub>2</sub>, H, OH, N<sub>3</sub>, NH<sub>2</sub>, COOH and CONH<sub>2</sub> and groups that can be formed therefrom by conventional chemical processes, where

R<sup>10</sup> is an alkyl of from 1 to 20 carbon atoms in which each of the hydrogen atoms may be independently replaced by halide, R<sup>14</sup> is aryl or a straight or branched C<sub>1</sub>-C<sub>20</sub> alkyl group, and where an N(R<sup>14</sup>)<sub>2</sub> group is present, the two R<sup>14</sup> groups may be joined to form a 5- or 6-membered heterocyclic ring,

R<sup>11</sup>, R<sup>12</sup> and R<sup>13</sup> are each independently selected from the group consisting of H, halogen, C<sub>1</sub>-C<sub>20</sub> alkyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C(=Y)R<sup>5</sup>, C(=Y)NR<sup>6</sup>R<sup>7</sup>, COCl, OH, CN, C<sub>2</sub>-C<sub>20</sub> alkenyl, C<sub>2</sub>-C<sub>20</sub> alkynyl oxiranyl, glycidyl, aryl, heterocyclyl, aralkyl, aralkenyl, C<sub>1</sub>-C<sub>6</sub> alkyl in which from 1 to all of the hydrogen atoms are replaced with halogen and C<sub>1</sub>-C<sub>6</sub> alkyl substituted with from 1 to 3

substituents selected from the group consisting of  $C_1$ - $C_4$  alkoxy, aryl, heterocyclil,  $C(=Y)R^5$ ,

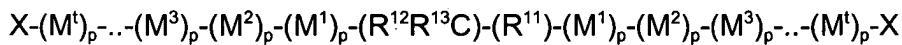
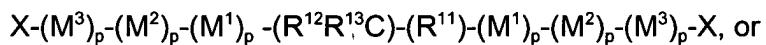
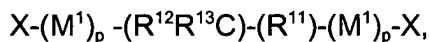
$C(=Y)NR^6R^7$ , oxiranyl and glycidyl,

where  $Y$  is  $NR^8$ ,  $S$  or  $O$ ;

where  $R^5$  is an aryl or an alkyl of from 1 to 20 carbon atoms, alkoxy of from 1 to 20 carbon atoms, aryloxy or heterocyclxy; and  $R^6$  and  $R^7$  are independently  $H$  or alkyl of from 1 to 20 carbon atoms, or  $R^6$  and  $R^7$  may be joined together to form an alkylene group of from 2 to 5 carbon atoms, thus forming a 3- to 6-membered ring, such that no more than two of  $R^{11}$ ,  $R^{12}$  and  $R^{13}$  are  $H$ , and  $R^8$  is  $H$ , a straight or branched  $C_1$ - $C_{20}$  alkyl or aryl, and

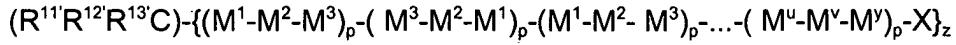
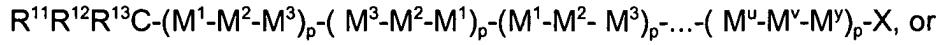
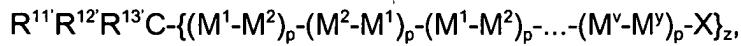
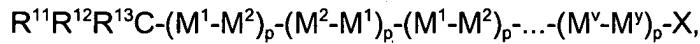
$M^1$ ,  $M^2$ ,  $M^3$ , ... up to  $M^t$  are each monomer units derived from radically (co)polymerizable monomer selected such that the monomers units in adjacent blocks are not identical, and  $t$  is an integer greater than 3;  $p$  for each block is independently selected such that the number average molecular weight of each block is up to 250,000 g/mel;

the following formulas:



wherein  $R^{11}$ ,  $R^{12}$ ,  $R^{13}$ ,  $X$ ,  $M^1$ ,  $M^2$ ,  $M^3$ , ... up to  $M^t$ ,  $t$ , and  $p$  are as defined above;

of the formulas:

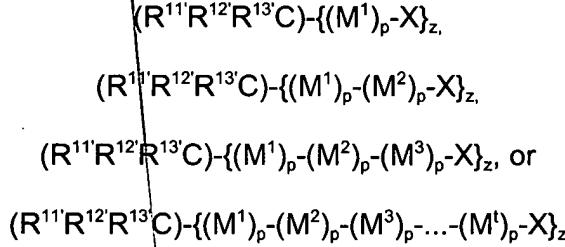


wherein from  $R^{11}$ ,  $R^{12}$ ,  $R^{13}$  and  $X$  are as defined above, and where  $R^{11'}$ ,  $R^{12'}$  and  $R^{13'}$  are the same as  $R^{11}$ ,  $R^{12}$  and  $R^{13}$ ,  $z$  is from 2 to 6, with the proviso that  $R^{11'}$ ,  $R^{12'}$  and  $R^{13'}$  combined have from 1 to 5 of the polymer chains enclosed in brackets attached thereto and the  $C$  has only one of the polymer chains enclosed in brackets attached thereto,

$M^1$ ,  $M^2$  and  $M^3$  are monomer units derived from different radically-(co)polymerizable monomers, and  $M^u$  is one of  $M^1$  or  $M^2$  or  $M^3$  and  $M^v$  is another of  $M^1$  or  $M^2$  or  $M^3$ , and  $M^y$  is the third (co)monomer,

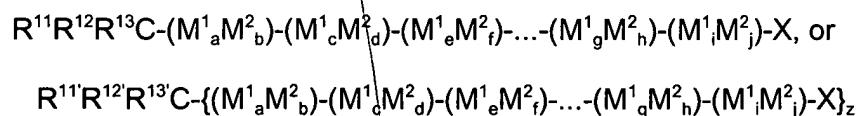
$p$  for each block is independently selected such that the number average molecular weight of the copolymer is up to 1,000,000 g/mol; and,

(co)polymers of this topology comprising four or more comonomers, and of the formulas:



wherein  $z$  is from 3 to 6;  $R^{11}$ ,  $R^{12}$  and  $R^{13}$  are the same as  $R^{11}$ ,  $R^{12}$  and  $R^{13}$  with the proviso that  $R^{11}$ ,  $R^{12}$  and  $R^{13}$  combined contain from 2 to 5 of the polymer chains enclosed in brackets attached thereto and the  $C$  has only one of the polymer chains enclosed in square brackets attached thereto, where  $X$  is as defined above;

$M^1$ ,  $M^2$ ,  $M^3$ , ...  $M^t$ ,  $p$ , and  $t$  are as defined above; and and copolymers comprising a block or graft with the above composition; and of the formula:

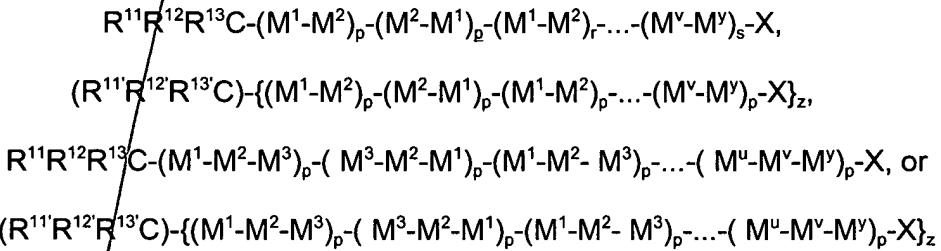


where  $z$  is from 2 to 6,  $R^{11}$ ,  $R^{12}$ ,  $R^{13}$  are as defined above,  $M^1$  and  $M^2$  are as defined above and PI - 543833.1

where  $R^{11'}$ ,  $R^{12'}$  and  $R^{13'}$  are the same as  $R^{11}$ ,  $R^{12}$  and  $R^{13}$  with the proviso that  $R^{11'}$ ,  $R^{12'}$  and  $R^{13'}$  combined have from 1 to 5 of the polymer chains enclosed in brackets attached thereto and the C has only one of the polymer chains enclosed in square brackets attached thereto, and

a, b, c, d, e, f, ... up to i and j are non-negative numbers independently selected such that  $a + b = c + d = 100\%$ , and any or all of  $(e + f)$ ,  $(g + h)$  and  $(i + j) = 100\%$  or 0, wherein the a:b ratio is from 100:0 to 0:100, the c:d ratio is from 95:5 to 5:95, such that  $c < a$  and  $d > b$ , and where applicable, the e:f ratio is from 90:10 to 10:90, such that  $e < c$  and  $f > d$ , and the endpoints of the molar ratio ranges of first monomer to second monomer in successive blocks progressively decrease or increase by 5 such that the e:f ratio is from 5:95 to 95:5, such that  $e \neq c$  and  $f \neq d$ , and the i:j ratio is from 0:100 to 100:0, such that  $i \neq e$  and  $j \neq f$ .

65. The (co)polymer of Claim 37, having a formula:



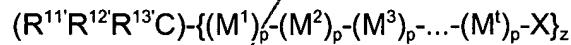
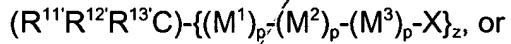
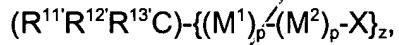
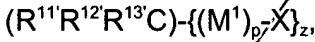
wherein z is 2 to 6;

wherein  $R^{11}$ ,  $R^{12}$ ,  $R^{13}$  and X are as previously defined, and where  $R^{11'}$ ,  $R^{12'}$  and  $R^{13'}$  are the same as  $R^{11}$ ,  $R^{12}$  and  $R^{13}$ , with the proviso that  $R^{11'}$ ,  $R^{12'}$  and  $R^{13'}$  combined have from 1 to 5 of the polymer chains enclosed in square brackets attached thereto and the C has only one of the polymer chains enclosed in square brackets attached thereto;

$M^1$ ,  $M^2$  and  $M^3$  are monomer units derived from different radically-polymerizable or copolymerizable monomers, and  $M^u$  is one of  $M^1$ ,  $M^2$  or  $M^3$  and  $M^v$  is another of  $M^1$ ,  $M^2$  or  $M^3$ , and  $M^y$  is the third (co)monomer,

*p* for each block is independently selected such that the number average molecular weight of the copolymer is from 1,000 to 1,000,000 g/mol; and (co)polymers of this topology comprising four or more comonomers

66. The (co)polymer of Claim 37, having a formula:



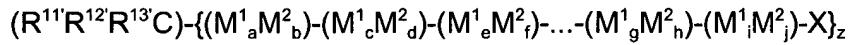
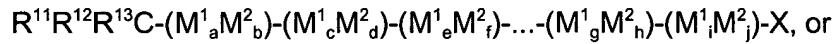
*S*  
*W*  
*C*  
*D*

where  $R^{11'}$ ,  $R^{12'}$  and  $R^{13'}$  are the same as  $R^{11}$ ,  $R^{12}$  and  $R^{13}$  as previously defined, with the proviso that  $R^{11'}$ ,  $R^{12'}$  and  $R^{13'}$  combined contain from 2 to 5 of the polymer chains enclosed in brackets attached thereto and the C has only one of the polymer chains enclosed in square brackets attached thereto, where X is as defined above;

$M^1$ ,  $M^2$ ,  $M^3$ ,  $M^t$ ,  $p$  and  $t$  are as defined above,

$z$  is from 3 to 6, and copolymers comprising a block or graft with the above composition.

67. The (co)polymer of Claim 37, having the formulae:



where  $R^{11}$ ,  $R^{12}$ ,  $R^{13}$ , and X are as previously defined, and where  $R^{11'}$ ,  $R^{12'}$  and  $R^{13'}$  are the same as  $R^{11}$ ,  $R^{12}$  and  $R^{13}$  with the proviso that  $R^{11'}$ ,  $R^{12'}$  and  $R^{13'}$  combined have from 1 to 5 of the polymer chains enclosed in square brackets attached thereto and the C has only one of the

polymer chains enclosed in square brackets attached thereto,

$M^1$  and  $M^2$  are monomer units derived from different radically (co)polymerizable monomers, and a, b, c, d, e, f, ... up to i and j are non-negative numbers independently selected such that  $a + b = c + d = 100\%$ , and any or all of  $(e + f)$ ,  $(g + h)$  and  $(i + j) = 100\%$  or 0, wherein the a:b ratio is from 100:0 to 0:100, the c:d ratio is from 95:5 to 5:95, such that  $c < a$  and  $d > b$ , and where  $e \neq 0$  and  $f \neq 0$ , the e:f ratio is from 90:10 to 10:90, such that  $e < c$  and  $f > d$ , and the endpoints of the molar ratio ranges of first monomer to second monomer in successive blocks progressively decrease or increase by 5 such that the e:f ratio is from 5:95 to 95:5, such that  $e \neq c$  and  $f \neq d$ , and the i:j ratio is from 0:100 to 100:0, such that  $i \neq e$  and  $j \neq f$ , and

$z$  is from 2 to 6.--

#### REMARKS

In the subject application, claims 1 - 14 and 21 - 63 are pending. In the Office Communication, the Examiner stated that the response appeared to be *bona fide*, however, was not completely responsive because the Applicants used square brackets in claims 37 and 40-42 for both the indication of material to be deleted and material to be retained. Applicants' herein submit new claims 64-67 to replace claims 37 and 40-42 to fully respond to the Examiner's requirement. Applicant's respectfully submit that the new claims are in condition for further examination.

#### CONCLUSION

In view of the foregoing amendments, Applicants respectfully submit that the subject application is in condition for further examination and allowance. Such action at an early date is respectfully requested. Should the Examiner have any remaining concerns regarding the  
PI - 543833.1